

Amendments to the Drawings

The attached sheets of drawings include new Figs. 5 and 6. These figures are explicitly incorporated from U. S. Patent Application No. 10/726,744, which was previously incorporated by reference in the present application.

Attachment: New sheets

Remarks

By this Amendment, claims 1, 5-7 and 31-50 are pending. Reconsideration is respectfully requested.

Drawings

Applicants have explicitly incorporated material that was previously incorporated by reference to US Patent Application Serial No. 10/726,744 entitled "THERMOELECTRIC DEVICES AND APPLICATIONS FOR THE SAME" under 37 C.F.R. § 1.57. Specifically, Applicants have incorporated Figures 5 and 14 (now Figures 5 and 6 of the present Application). No new matter is added and none of the explicitly incorporated material supports a best mode of a claimed device or method.

Specification

Applicants have amended the specification as required by the Examiner.

Additionally, Applicants have explicitly incorporated material that was previously incorporated by reference to US Patent Application Serial No. 10/726,744 entitled "THERMOELECTRIC DEVICES AND APPLICATIONS FOR THE SAME" under 37 C.F.R. § 1.57. No new matter is added and none of the explicitly incorporated material supports a best mode of a claimed device or method.

Rejections under 35 U.S.C. § 102(b)

Claims 14 and 24-30 Are Rejected Under § 102(b) - Albsmeier

Claims 14 and 24-30 are rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by PCT Publication No. WO 02/095707 A1 to Albsmeier *et al.* ("Albsmeier"). Claims 14 and 24-30 are herein cancelled so these rejections are now moot.

Applicants note that certain of the claims as now pending recite, in part, an electric power generator wherein the thermoelectric generator utilizes a temperature difference between a first temperature region and a second temperature region to produce electric power regardless of whether the first temperature region is warmer or cooler than the second temperature region.

Thus, these claimed devices operate on “two-way” heat exchange directions. Albsmeier does not teach or suggest such a device.

Rejections under 35 U.S.C. § 102(e)

Claims 1-11 and 14-23 Are Rejected Under § 102(e) - Stark

Claims 1-11 and 14-23 are rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by U.S. Patent Publication No. 2004/0231714 to Stark *et al.* (“Stark”). Applicants traverse.

Claims 2-4, 8-11, and 14-23 have been cancelled by this Amendment. These rejections are now moot in regard to those claims.

Claim 1

Amended claim 1 recites, in part, a method for providing power comprising utilizing a difference between thermal energy of a first temperature region and thermal energy of a second temperature region to produce electric power from the thermoelectric generator regardless of whether the first temperature region is warmer or cooler than the second temperature region. Stark does not teach or suggest such an electric power generation method.

The Stark reference only discloses a one-way thermal energy transfer method to create power. The Stark device only transfers energy from a heat source through a thermoelectric generator and into a heat sink. Stark states: “The bottom plate 12 and top plate 14 may be configured to substantially provide thermal contact between a heat sink 22 and a heat source 20, respectively, as can be seen in FIG. 1.” (Para. 0031.) An arrow in FIG. 1 of Stark represents thermal contact with a heat source 20 on one side of the thermoelectric generator 10 and a second arrow represents thermal contact with a heat sink 22 on the opposing side of the thermoelectric generator 10 illustrating the operable direction of thermal energy flow. Stark further states: “Whenever heat is applied by the heat source 20 through the top plate 14 at the hot side metal bridge 26, a temperature gradient . . . is created with respect to the cold side metal bridge 28 of the thermocouple 46 at the bottom plate 12 and heat sink 22 such that a heat flux 48 flows through the thermoelectric generator 10.” (Para. 0036.) Because the thermoelectric generator of Stark is operable as only a one-way flow of thermal energy device Stark does not

teach or suggest the method recited in amended claim 1. Accordingly, claim 1 is allowable over Stark.

Claims 5-7

Each of dependent claims 5-7 are allowable over Stark for at least the same reasons as set forth with respect to claim 1 and based on each of the dependent claim's unique and non-obvious combination of features.

Claims 1-4, 7-17, 20-25, and 28 are Rejected Under § 102(e) Over Luo

Claims 1-4, 7-17, 20-25, and 28 are rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by U.S. Patent Publication No. 2004/0094192 to Luo ("Luo"). Applicants traverse.

Claims 2-4, 8-17, 20-25, and 28 have been cancelled and thus the rejection is now moot as to those claims.

Claim 1

Claim 1 recites in part a method for providing power comprising utilizing a difference between thermal energy of a first temperature region and thermal energy of a second temperature region to produce electric power from the thermoelectric generator regardless of whether the first temperature region is warmer or cooler than the second temperature region. Luo does not teach or suggest such a power generation method.

Luo discloses a thermoelectric device configured to operate only as a one-way flow thermal device; specifically, the Luo device can only generate power as a result of a flow of thermal energy in a single direction. Luo discloses:

[A] thermoelectric cooling device [having] a hot side in thermal communication with a heat collector that is disposed in thermal communication with a heat source. A heat sink is provided on a cold side of the thermoelectric cooling device. . . . The hot side of the thermoelectric cooling device receives heat energy from the heat collector so as to result in a temperature difference between the hot and cold sides.

(Luo, Abstract.)

Figure 1 of Luo discloses such a heat collector connected to the top side, or hot side, of a thermoelectric cooling device, and a heat sink connected to the bottom side, or cold side, of the

thermoelectric cooling device. Luo thus only discloses a thermoelectric device that is configured to operate to generate power by moving thermal energy in a single direction where heat is received on one side through a heat collector and dissipated on an opposite side through a heat sink.

For at least these reasons, Luo does not anticipate the method of claim 1.

Claim 7

Dependent claim 7 is allowable over Luo for at least the same reasons as set forth with respect to claim 1 and based on the dependent claim's unique and non-obvious combination of features.

Rejections under 35 U.S.C. § 103(a)

Claims 15-23 are rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Albsmeier. Claims 15-23 are canceled by this amendment and these rejections are now moot.

Claims 14-30 are rejected under 35 U.S.C. § 103(a) over U.S. Patent No. 4,940,976 to Gastouniotis *et al.* ("Gastouniotis") in view of Luo. Claims 14-30 are cancelled by this amendment and these rejections are now moot.

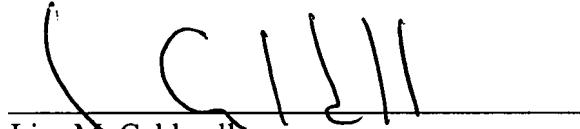
Should the Examiner have any questions or need for further information, the Examiner is requested to contact the undersigned at the below noted telephone number.

Respectfully submitted,

KLARQUIST SPARKMAN, LLP

One World Trade Center, Suite 1600
121 S.W. Salmon Street
Portland, Oregon 97204
Telephone: (503) 595-5300
Facsimile: (503) 595-5301

By


Lisa M. Caldwell
Registration No. 41,653